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THERAPEUTICAL EFFICACY OF MEDICINAL PRODUCTS AT DEMODECOSIS OF DOGS

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Therapeutic effectiveness of medicinal products: brovermektyn, sanoderm and ektosan under different schemes use dogs that suffer from scaly (squamous) form demodicosisIndices intens- and ekstensefficiency of medicinal products. The efficient treatment regimen for dogs with demodecosis timetable recovery animals.

Dogs, demodekosic invasion, therapeutic efficacy, medicinal products, treatment.

Introduction. Demodekosis – parasitic disease of dogs, which runs chronically and is caused by mites *Demodex canis*. This is a type of mite Arthropoda, subtype – Chelicerata, class – Arachnida, number – Acariformes, contract – Trombidiformes, family – Demodicidae, kind – Demodex [2].

Currently 143 known species demodectic mites, parasitic on various animals. People also suffer demodecosis, but they parasitic other mites – *D. folliculorum, D. brevis and D. longissimus* [1, 8].

Morphologically different types of mites are similar. Their species belonging can determine the size at different stages of development and the type of host on which they are parasitic [7].

Analysis of the literature shows that demodecosis of dogs registered in many countries. In 1999, Mueller R. S. et al. [11] described demodecosis in 222 dogs in the USA and Chesney C. J. (1999) [10] established the presence of demodecosis of dogs in four countries on three continents.

Difficulty chemotherapy demodecosis is difficult delivery of the active ingredient to the localization of ticks (the colony) for their complete destruction. Acaricides systemic (macrocyclic lactones, some pyrethroids, etc.). Cause the death of adults, but the preimaginal stage are in a passive state, they do not work. If treatment stops the larvae and nymphs move into an active state, while deytonimph fade and turn into adults. Latest multiply the number of ticks and quickly restored [3–5].

Treatment of demodecosis of dogs should be comprehensive and based on the inhibition of life mites *D. canis*. It is necessary to eliminate all factors contributing to disease, avoid the use of corticosteroids, conduct struggle with secondary pyodermia systemically acting antibiotics, and operational scrapings of skin every 3–4 weeks, continue treatment until the three negative results [6, 9].

In response to the above is the actual study therapeutic efficacy of new drugs that reduce their use of terms and condition speedy recovery of dogs.

The purpose of research. The aim of the work was to study the effectiveness of various therapeutic regimens of dogs suffering from scaly form demodecosis.

Material and methods of research. Research conducted during the autumn-winter 2014 temporary basis point overexposure of dogs CE «Spetsservis», Kremenchuk. Parasitological study was carried out in terms of Kremenchuk city state veterinary laboratory.

To diagnostics at demodecosis of dogs scrapings were taken from the affected skin areas on the border with a healthy area of 2 cm^2 (2 x 1 cm) and examined by vital method of A. Alfimova (1951). Counting the number of live mites in all research material (II).

To determine the therapeutic efficacy of various treatment regimens for animals at demodecosis was formed four groups of mongrel of dogs aged from 5 to 7 months: three experimental and one control (by 5 goals each). They were spontaneously affected with demodex infestation intensity of 2,0±0,44 to 2,6±0,24 copies mites 2 cm^2 surface of the animal and scaly form during the invasion. With the purpose of treatment patients dogs used the following medicinal products:

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1. Brovermektyn (SPC «Brovafarma», Ukraine) – 22-, 23-dihydroavermektyn B_1, which is a 1% solution of ivermectin in a special solvent. It belongs to the macrolide antibiotics. Dogs used remedy subcutaneously at a dose of 0,2 cm^3/10 kg body weight.

2. Ektosan (SPC «Brovafarma», Ukraine) – oily transparent liquid. It contains a combination of two existing foundations: alfametryn (alpha-cypermethrin) and piperonil-butoxide. The drug is used by applying to the affected skin solution (1 : 750) twice with an interval of 10 days.

3. Sanoderm (Corporation «Arterium», Ukraine) – cream, 1 g which contains betamethasone dipropionate – 0,64 mg, gentamicin sulfate – 1 mg, clotrimazole – 10 mg, nipahin – 2 mg. The medicinal product was applied thinly to the affected skin twice daily (morning and evening), gently rubbing into the skin. Before applying the cream to the affected area of hair mow.

Animals research groups used medicinal products as follows:

– dogs subcutaneously injected first group brovermektyn.

– the dogs were injected subcutaneously second group brovermektyn and externally treated ektosan;

– the dogs were injected subcutaneously third group brovermektyn and externally treated sanoderm.

Dogs fourth group served as control drugs they were not asked.

Every day, followed by a clinical condition of the dogs. Preparations continued to ask to full recovery animals (restoration of hair in places lesion disappearance scales and redness).

The effectiveness of treatment was determined at 10, 20 and 30 days after treatment for akarologic study.

Results and discussion. The results of the data presented in Table 1, 2.

As can be seen from the Table 1, on the 10^{th} day of the experiment, 40 % of of dogs first experimental group after the application brovermektyn found in scrapings living demodex. Later, on the 20^{th} day of the experiment extensiveness of demodektic invasion was only 20 % and at the 30^{th} day mites in the material is not known. Term recovery on average was 29,4 days.

In the second experimental group dogs after simultaneous application brovermektyn and ektosan at the 10^{th} day of the experiment mites scrape did not show, but a full recovery of animals recorded at 14,6 days.

After simultaneous application brovermektyn and sanoderm in of dogs and third experimental group in 20 % of animals on the 10^{th} day of the experiment showed live mites. Since the 20^{th} day, the scrape of demodex is not known. Term recovery on average was 21,6 days.

Comparing demodectic intensity of infestation before and after treatment of of dogs, found that in animals first experimental group the number of ticks in the scrape of leather (II=2,4±0,51 copy mites in 2 cm^2 of body surface) and gradually decreased to 20^{th} day of the experiment was 1 copies. (Table 2). By the 30^{th} day the dogs were free from pathogens demodecosis. In dogs, the second

Table 1. **Extensefficacy of medicinal products by scaly form at demodecosis of dogs,** n=5

Groups of dogs	Medicinal products	Demodex infestation, EI %				EE, %	Term recovery, days
		To treatment	After the first treatment, day				
			10 th	20 th	30 th		
The first experimental	Brovermektyn	100	40	20	–	100	29,4
The second experimental	Brovermektyn, ektosan	100	–	–	–	100	14,6
The third experimental	Brovermektyn, sanoderm	100	20	–	–	100	21,6
The control	–	100	100	100	100	–	–

Table 2. **Intensefficacy of medicinal products by scaly form at demodecosis of dogs,** n=5

Groups of dogs	Medicinal products	Demodex infestation, II copies of mites in 2 cm^2 of body surface				IE, %	Term recovery, days
		To treatment	After the first treatment, day				
			10 th	10 th	10 th		
The first experimental	Brovermektyn	2,4±0,51	1	1	–	100	29,4
The second experimental	Brovermektyn, ektosan	2,6±0,24	–	–	–	100	14,6
The third experimental	Brovermektyn, sanoderm	2,4±0,6	1	–	–	100	21,6
The control	–	2,0±0,44	2,2±0,2	2,4±0,24	2,4±0,51	–	–

experimental group (II=2,6±0,24 copy), starting from the 10th day of the experiment, mites in scrapings known.

The intensity of infestation in dogs demodectic third experimental group was equal to the task preparations 2,4±0,6 copies mites. On the 10th day II decreased and was 1 copies and on the 20th – mites in the material is not known.

Thus, medicinal products brovermektyn, sanoderm and ektosan have 100 % efficiency (IE, EE) by scaly form at demodecosis dogs, but the shortest term recovery (12 to 19 days) were recorded in the application and brovermektyn and ektosan.

Conclusions and prospects for further development.

1. Preparations domestic production brovermektyn, sanoderm and ektosan and effective medicinal products for the treatment of dogs suffering from scaly form demodecosis.

2. The simultaneous use of infested dogs brovermektyn and ektosan promotes more rapid recovery of animals.

The prospect of future research is to examine the hematological changes in the treatment of of dogs suffering from demodecosis.

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